

Behavioral medicine in psychology

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This study was undertaken to research behavioral medicine in psychology. In summary, this research examines the origins of behavioral medicine, reviews the psychosocial and behavioral mechanisms, and describes concrete and practical implementations of behavioral knowledge as they have been applied to medicine. The purpose of this work is to outline main features of behavioral medicine and its utilization in psychology. Behavioral medicine is an interdisciplinary field of study integrating the behavioral, social, and medical sciences (Miley, 1999, p. 10).

It grew out of behaviorism in the early 1970s and integrated psychology into physical illness. Schwartz and Weiss defined the term: Behavioral medicine is the development and integration of biomedical, psychosocial and behavioral sciences' knowledge and techniques relevant to health and illness and the application of this knowledge and these techniques to prevention, diagnosis, treatment, and rehabilitation" (1978, p. 249-51).

The area of behavioral medicine includes behavior-change programs which operate different health-related activities (self-examination for early symptoms of disease, following special diets, exercising and taking medicine) (Pierce, 2004, p. 380). Some history should be given. Between the burst of enthusiasm for learning based therapies in the 1920s and their revival in the 1960s a great deal of laboratory research and refinement of learning theory was carried out by Clark Hull, B. F. Skinner, Neal Miller, and others.

By the 1950s, efforts to apply more sophisticated learning theories to psychopathology became widespread. The early psychoanalytic approaches soon gave way to experimental studies aimed at identifying psychological

factors believed to play a major role in the development of specific somatic complaints. These initial attempts to link personality types to specific disease states were generally disappointing but nevertheless established a firm basis for interdisciplinary research in the new field of behavioral medicine.

Rather than attempting to change problem behavior, however, these efforts mainly translated the clinical theory and lore of psychoanalysis into the language of learning theory. The most ambitious of these translations was *Personality and Psychotherapy*, by John Dollard and Neal Miller (1950). Dedicating their book to "Freud and Pavlov and their students," Dollard and Miller sought "to combine the vitality of psychoanalysis, the rigor of the natural-science laboratory, and the facts of culture" (p.

3). They called psychotherapy a "window to higher mental life" and "the process by which normality is created" (pp. 3, 5). Accepting psychoanalytic views of psychopathology and its treatment, Dollard and Miller mainly sought to state these views in more rigorous terms derived from laboratory research on learning. Despite the basic contrasts listed earlier, psychoanalytic and learning theories converged in several ways.

They stated, both explained mental processes largely in terms of principles of association, whereby sequences of thoughts are governed by previous contiguities among ideas, similarity of content, and other shared features. This associationistic view of mental processes was the basis for the psychoanalytic technique of free association, as well as the psychoanalytic theory of mental symbols. Psychoanalytic theories and most learning theories postulated that reduction of organically based drives promoted the learning of important responses, attitudes, and emotions.

Psychoanalytic theory and learning theories blamed childhood experiences for most adult psychopathology but did not actually test the relationships that were assumed. Neal Miller began his career strongly influenced by his psychoanalytic training, so his earlier work reflects a more psychological approach to behavior. Impressed by his clinical observations of the effects of conflicting motivations, he searched for underlying mechanisms involved, which led to work in brain stimulation and control of autonomic responses utilizing biofeedback techniques.

His research emphasizes the interrelationship between physiology, biochemistry, and pharmacology. Miller took his undergraduate training at the University of Washington, completed his master's degree at Stanford University, and received his Ph. D. from Yale University in 1935. Trained as a psychoanalyst, he combined clinical observation and a broad line of research that led to such important contributions as the frustration-aggression hypothesis and social learning theory.

Searching for the underlying causes of conflicting motivation, he moved into the area of brain stimulation and then to an interesting and highly controversial series of studies involving the control of autonomic responses utilizing biofeedback techniques. After a distinguished career at Yale and the Institute of Human Relations, he moved to Rockefeller University in 1966 where he continues his interests in physiology, biochemistry, and pharmacology. Professor Miller served as president of the American Psychological Association in 1969.

In 1969 Neal Miller, in an article in *Science*, summarized a series of studies in which, by the use of Skinnerian reinforcement strategies, he and his

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associates had trained animals to bring a number of internal bodily functions seemingly under self-control. The bodily functions thus trained included blood pressure, urine formation, heart rate, body temperature, and bowel distensions. Together with other demonstrations of a similar kind, often with human subjects, this work led to a new form of therapy called biofeedback.

Using sophisticated equipment for monitoring and displaying to the patient the moment to moment fluctuations in blood pressure, skin temperature, heart rate, muscle tension, blood volume, or brain waves, a host of investigations began to report the success in treatment by biofeedback and other self-conditioning methods of headache, muscle tension, high blood pressure, nervousness, Raynaud's disease (in which one's finger tips and toes become so cold that they lose all blood circulation and bring on excruciating pain), tics, bedwetting, and a host of comparable disorders.

A new subspecialty in medical psychology and medicine was being born. The name given to it was behavioral medicine. As this field has developed its scope has expanded. It now includes the helping of patients who want to quit smoking, give up drugs, lose weight, take their insulin or follow the prescribed treatments for other conditions where therapy fails for lack of compliance to a regimen that is known to be effective. It also includes individuals who are healthy and want to remain so by jogging, eating low cholesterol and other more healthful foods, abstain from alcohol, and so on.

A brief historical review of the developments in medicine and in psychology which led to the emergence of behavioral medicine and behavioral health as viable, interdisciplinary specialties is available elsewhere (Matarazzo, 1980, 1982). The emergence of health psychology as a vigorous new discipline is a <https://assignbuster.com/behavioral-medicine-in-psychology/>

natural outcome of scientific and technological advances within psychology. Experimental and physiological psychology have contributed greatly to this evolution, beginning with Pavlov's early work with dogs at the turn of the century. His concept of conditioned reflex provided the basis for much of classical learning theory.

In the 1920s, Walter Cannon introduced the concepts of homeostasis and fight versus flight. Neal Miller applied aspects of these earlier theories to an understanding of the role of conditioning in psychophysiological change and how certain aspects of the autonomic nervous system could be controlled. The modern use of biofeedback treatment to teach an individual how to control muscle tensions, blood pressure, and other physiological processes developed out of these earlier efforts. Psychophysiology made contributions to behavioral medicine.

Psychophysiological applications to behavioral medicine typically involve the monitoring of physiological functions in relation to concurrent emotional and behavioral states. Originally, psychophysiological studies were confined to the laboratory or clinic, and explored the cardiovascular and neuroendocrine responses to stressors, individual differences in reaction patterns, or changes in physiological function with behavioral interventions. Laboratory studies remain the mainstay of psychophysiology, but the development of ambulatory methods has increasingly led to investigations under everyday or naturalistic conditions.

Describing psychophysiology as a method of studying relationships between physical responses and ongoing behavior places no limits on the nature of the physiological processes being monitored. Indeed, one of the <https://assignbuster.com/behavioral-medicine-in-psychology/>

characteristics of psychophysiology has been the development of technology to assess more and more sophisticated and precise aspects of cardiovascular function. In the behavioral epidemiological study, physiological measures are typically collected under office or clinic conditions on one or a few occasions, whereas psychophysiologicalists are predominantly concerned with dynamic interrelations between behavior and physiology.

Psychophysiological research in early behavioral medicine was dominated by studies of biofeedback and the voluntary control of blood pressure and heart rate (Beatty & Legewie, 1977). Over the last years, mental stress testing in the laboratory has become the major research paradigm (Steptoe & Vogele, 1991). It has involved studies of many clinic and high-risk groups, and assessments of a wide range of physiological processes in response to a variety of conditions, such as problem solving, stress interviews, and information-processing tasks.

The methodology of mental stress testing in the laboratory has been thoroughly reviewed in various texts (Matthews, Weiss & Detre, 1986). Reservations concerning the reliability of laboratory assessments have largely been allayed by a new generation of investigations, indicating that, provided care is taken with physiological measurement and administration of behavioral stimuli, reliable and consistent response patterns are observed. The psychophysiological treatment par excellence is biofeedback. Biofeedback is a research-based empirical approach, with greater emphasis on replication of results and cautious examination of evidence.

Yet biofeedback pursues the same goal as other body therapies, that of using individual awareness and control over the body to enhance personal potential, health, and growth. It brings together humanistic conceptions of mind and body with sophisticated electronic technology to produce powerful strategies for self-control over consciousness, emotion, and physiology. The area of volitional control of physiological activity has contributed significantly to the growing field of behavioral medicine and health psychology. The beginnings of biofeedback go back to the late 1960s.

Kenneth Gaarder points out that biofeedback was not so much a discovery as it was " an awareness which emerged from the Zeitgeist" (Gaarder & Montgomery, 1979). Many researchers of the 1950s and 1960s can be cited as independent founders of biofeedback. For example, Hefferline conceptualized biofeedback as a powerful tool, perhaps more powerful than Gestalt awareness exercises, to expand body awareness and self-awareness (Knapp, 1986). As with other so-called departures in psychology, there were earlier examples. The primary training method developed and utilized in this learning process has been labeled biofeedback.

Its theory grounded on the concept introduced by Elmer Green: Every change in the physiological state is accompanied by an appropriate change in the mental emotional state, conscious or unconscious, and conversely, every change in the mental emotional state, conscious or unconscious, is accompanied by an appropriate change in the physiological state. (Green, Green, & Walters, 1970, p. 3) This initial research activity began to stimulate more interest, among both the scientific community and the general public,

in the area of biofeedback because of its' many potentially important clinical and medical applications.

For example, it would be therapeutically valuable if it was possible to teach patients with hypertension how to lower their blood pressure, or to teach patients with headaches how to control the vasodilation process involved in the pain phenomenon. Indeed, Birk (1973) was the individual who coined the term behavioral medicine to describe the application of a behavioral treatment technique (biofeedback) that could be applied to medicine or medical problems (e. g. , headache pain).

Each school of body therapy or body work presents a different manifestation of the fundamental psychophysiological principle that we can intervene somatically and produce changes in emotion and relationship, and inversely, that we can intervene psychologically, with somatic consequences. Each of the body-therapy approaches emphasizes a dual psychological and somatic intervention, and each emphasizes breathing, muscular rigidity, and the physical blocking of memories and affective experiencing. In turn, each body therapy seeks to release the individual from physical inhibitions and to restore a full psychophysiological selfregulation.

The work of Alexander Graham Bell (1847-1922), the inventor of the telephone, with the deaf, and his interest in using the visible display of speech sound, either by means of 'manometric' flames or by an early form of kymograph, in order to help the deaf to reproduce correct sounds, would seem to utilize feedback principles (Bruce, 1973). However, it needed a dramatic event to focus attention on the area of feedback control. This event

took place at the 1967 annual meeting of the Pavlovian Society of North America in the form of a report by Neal Miller (1968).

He introduced a technique that his colleague, Jay Towill, had first devised. This involved immobilizing animals with D-tubo curarine, artificially respirating them, and with electrodes placed in the so-called 'pleasure centers' in the brain, operantly conditioning various physiological systems. For example, it was reported that the animal could learn, through operant conditioning, to increase or lower blood pressure, increase or decrease heart-rate, kidney flow, and so on. The reward was, in each case, a brief electric pulse delivered to the pleasure centres.

The use of D-tubo curarine to produce paralysis of skeletal muscles was an attempt to avoid the possibility that the animal was modifying its autonomic responses via voluntary activities, such as changes in muscle tension or breathing pattern or rate. Research papers soon followed, and in a series of studies carried out with Leo DiCara on the curarized rat, the instrumental conditioning of heart-rate, blood-pressure, and renal blood-flow and--in collaboration with A. Banuazizi--contraction of the intestines, appeared to be demonstrated. Reports from other laboratories seemed to support Miller's findings.